RESPONSE UNDER 37 C.F.R. § 1.111

In response to the Office Action dated **October 4, 2007**, Applicant submits that claims 1-20 are in allowable form, and requests reconsideration and withdrawal of the rejection of claims 1-20.

REMARKS

This response is intended as a full and complete response to the Office Action dated October 4, 2007. In the Office Action, the Examiner notes that claims 1-20 are pending, of which claims 1-20 stand rejected.

By this Amendment, independent claims 1 and 5 have been amended to include the limitation that the fusible link melts in response to ambient heat. This serves to distinguish the device from one in which the link can melt due to a current overload in the electrical circuit of which it forms a part.

Applicant has amended independent Claims 1 and 5 and the Abstract to add the word "ambient." This clarifies the scope of Applicant's invention, distinguishes it from the '757 reference (in which the fuse fails via ignition when directly contacted by a flame), and also distinguishes it from other prior art in which the fuse fails via a high temperature generated internally by an overcurrent in the electrical circuit. This amendment is supported by the Detailed Description of the Invention, which states:

> During emergency operations when heat in the vicinity of the control device 20 exceeds a predetermined value such as a minimum temperature due to, for example, a fire, the heat-meltable fusible link 18 melts, causing an open electrical circuit condition to be present at the input from the fusible link 18 to the actuator 22.

(Paragraph number 0022 of Pub. No. US 2006/0098370 (emphasis added).)

The specification therefore supports this amendment to Claims 1 and 5 and the Abstract, by showing that the fuse in Applicant's invention is designed to fail by melting at a high ambient temperature such as may be induced under fire conditions, rather than by failing via a high internal temperature generated by an overcurrent, or by failing via ignition upon contact with a flame, as taught by the '757 reference.

In view of these amendments and the following discussion, the applicant submits that none of the claims now pending in the application are obvious under the provisions of 35 U.S.C. § 103. Thus, the applicant believes that all of these claims are in allowable form.

Based on the following remarks, the application is deemed to be in condition for allowance and prompt action to that end is respectfully requested.

REJECTION OF CLAIMS UNDER 35 U.S.C. §103(a)

The Examiner rejected claims 1-20 under 35 U.S.C. § 103 as being obvious and unpatentable over the Jacoby patent (U.S. Patent No. 4,052,690, issued October 4, 1977) in view of the Dunn patent (U.S. Patent No. 3,889,757, issued June 17, 1975). The rejection is respectfully traversed.

As a preliminary matter, we believe that it would be helpful to review the appropriate standard under 35 U.S.C. § 103 for analyzing the features of a claim with respect to the prior art. The United States Supreme Court held that:

> Under § 103, the scope and content of the prior art are to be determined; differences between the prior art and the claims at issue are to be ascertained; and the level of ordinary skill in the pertinent art resolved. Against this background, the obviousness or nonobviousness of the subject matter is determined. Such secondary considerations as commercial success, long felt but unsolved needs, failure of others, etc., might be

> utilized to give light to the circumstances surrounding the origin of the subject matter sought to be patented. As indicia of obviousness or nonobviousness, these inquires may have relevancy.

Graham v. John Deere Co., 383 U.S. 1, 17-18 (1966).

It is well settled that "[t]he test under § 103 is not whether an improvement or a use set forth in a patent would have been obvious or non-obvious. The test is whether the claimed invention, considered as a whole, would have been obvious or nonobvious. Jones v. Hardy, 220 U.S.P.Q. 1021, 1025 (Fed. Cir. 1984) (emphasis added). Thus, it is impermissible to focus either on the "gist" or "core" of the invention. Bausch & Lomb, Inc. v. Barnes-Hind/Hydrocurve, Inc., 230 U.S.P.Q. 416, 420 (Fed. Cir. 1986). Moreover, the invention as a whole is not restricted to the specific subject matter claimed, but also "embraces . . . its properties[] and the problem it solves." In re Wright, 6 U.S.P.Q. 2d 1959, 1961 (Fed. Cir. 1988).

"All words in a claim must be considered in judging the patentability of that claim against the prior art." In re Wilson, 424 F2d. 1382, 1385, 165 U.S.P.Q. 494, 496 (C.C.P.A. 1970), M.P.E.P. 2143.03. Likewise, the references must be taken in their entireties, including those portions which argue against obviousness. Bausch & Lomb, Inc. v. Barnes-Hind/Hydrocurve, Inc., 230 U.S.P.Q. 416, 420 Fed. Cir. 1986). It is impermissible within the framework of 35 U.S.C. § 103 to pick and choose from a reference only so much of it as will support a conclusion of obviousness to the exclusion of other parts necessary to a full appreciation of what the reference fairly suggests to one skilled in the art. Id. at 419.

In a Graham inquiry, the level of ordinary skill in the pertinent art would be fulfilled by a person having a bachelor's degree in an engineering discipline.

Reviewing the scope and contents of the prior art, reference '690 teaches a fuse which is formulated to melt at a predetermined ambient temperature, such as may be reached during a fire, activating a valve by purely mechanical means, without any electrical interface. The function of the valve envisioned in the '690 patent is to operate a pneumatic alarm siren, providing an indication function only.

We now turn to the differences between the prior art and the claims in issue. The applicant's invention teaches a fuse which is formulated to melt at a predetermined ambient temperature, such as may be reached during a fire, thereby *deactivating* an electrical circuit and allowing an emergency control device, such as a process valve, to be moved to its fail-safe position. The movement of the valve to its fail-safe position could act to cut off the flow of fuel or other hazardous materials, thereby mitigating the fire or at least not contributing to its expansion, or could be used to cut off the flow of material which is non-flammable but particularly valuable, to prevent its spillage and destruction. Therefore, the difference between the prior art and the claims in question is that reference '690 fails to incorporate an electrical means of operation and fails to integrate directly to an emergency control device, only performing an indication function instead of a control function.

The '757 reference fails to bridge the substantial gap between the '690 reference and the applicant's invention. The '757 reference discloses a fuse which is formulated to fail under fire conditions, performing a first function of activating a valve by purely mechanical means, the valve serving to release a fire retardant, and performing a second function of shutting off the cooking unit associated with the fire, via an electrical interface. (See '757 patent, col. 11, lines 15-25.) The second function may be

accomplished either by shutting off the power of an electrical cooking unit or by closing an electrically-actuated shutoff valve in a gas-fired cooking unit. (See '757 patent, col. 4, lines 25-28.) However, the '757 reference teaches away from the applicant's invention, in that the fuse of the '757 reference is specifically "a flame-responsive ignition means resistant to spontaneous ignition at [high ambient] temperatures . . . ." (See '757 patent, col. 11, lines 15-17.) Thus, the fuse of the '757 reference functions in a completely different manner than the fuse of applicant's invention. The applicant's fuse is designed to fail by melting at high ambient temperatures, where the fuse of the '757 patent is designed to withstand high ambient temperatures (and to fail by a completely different mode of operation, via ignition when directly contacted by a flame).

Therefore, the applicant submits that the '690 and '757 references cannot be practically combined to achieve the solution to the same problem as applicant's claimed invention, and even if they can be combined, they fail to teach or suggest the applicant's claimed invention as a whole. Specifically, the combined prior art references fail to teach or suggest a fusible link, designed to fail by melting at high ambient temperatures, de-energizing an electrical circuit, allowing an emergency control device to return to a fail-safe position.

Applicant respectfully submits that any prima facie case of obviousness raised by the Examiner has been rebutted by the present amendments and the arguments presented above.

The fact that the Examiner can find no prior art reference that specifically describes a heat-meltable fusible link establishing a normally-closed electrical circuit between wiring and an actuator that controls the state of an emergency process control

device only serves to bolster applicant's argument of non-obviousness. In making the Section 103 rejection, the Examiner relies on a boilerplate, blanket statement found in the '690 reference at the end of the specification (and found in almost any other patent) that the teachings are not limited to the specific embodiments presented, ('690 patent, col. 5, lines 9-17), and that, therefore, the heat-meltable fusible link described in '690 is not limited to controlling valves and/or their actuators by purely mechanical means. This leads to the combining of the '757 reference that discloses a fusible link that may de-energize an electrical circuit, which may return a valve to its fail-safe position. There is, however, no suggestion to apply the teachings of the '757 patent in the manner set forth in the present claims in order to support such a rejection, since the fusible link disclosed in the '757 reference is a completely different device than that disclosed and claimed by applicant. That is, the '757 reference teaches a fusible link that is designed to withstand high temperatures, whereas the fusible link in the applicant's invention is specifically designed to melt at a predetermined high temperature.

The apparently commercial device identified in the attached Information Disclosure Statement (IDS) is an example of another indirect control device employing a fusible link. The prior art device combines two independent devices: a fusible link which upon failure due to high ambient temperature allows a tensed spring to relax, tripping an electrical switch. In contrast, in Applicant's invention, under normal conditions the electrical circuit has continuity directly through the fusible link, enhancing the reliability of the device. The devices also have different applications, as the prior art device is applied to the control of hydraulic pump motors, whereas Applicant's invention is specifically designed for use with Emergency Isolation Valve (EIV) control circuits to

provide proactive response to a fire when EIV's are located within fire hazardous zones, with the fire safety fusible link electrical terminal block being built into the active electrical EIV control elements.

Applicant readily admits that various forms of fusible links were known in the art at the time of the invention. However, applicant's specifically claimed limitation of a heat-meltable fusible link that de-energizes an electrical circuit and allows a valve to return to its fail-safe position, was clearly not known.

Conclusion

In view of the discussion presented above, the Applicant submits that this Amendment responds to all of the points raised in the Office Action. Specifically, the Applicant submits that claims 1-20 are not obvious, that they fully satisfy the requirements under 35 U.S.C. §103 and are patentable. Therefore, the Applicant respectfully requests that the rejections be withdrawn.

If, however, the Examiner believes that there are any unresolved issues in any of the claims now pending in the application, we respectfully request that the Examiner telephone Thomas E. Spath at (212) 885-9250 so that appropriate arrangements can be made for resolving such issues as expeditiously as possible.

Respectfully submitted,

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